FLAMES workshop
Fluid Simulations of the Left Atrium with Multi-source Experimental Studies

Agenda *(tentative, version May 5, 2025):*

- 9:00 - 9:30 am - Welcome and presentation of the FLAMES workshop
- 9:30 - 11:00 am - Invited presentations
- 11:00 - 11:15 am - Coffee break
- 11:15 - 12:00 am - Round table discussion and closing remarks

The FLAMES (Fluid Simulations of the Left Atrium with Multi-source Experimental Studies) workshop, aims to foster collaboration, innovation, and knowledge exchange among researchers in the field of left atrium (LA) computational fluid simulations (CFD). It will provide a platform to benchmark modeling strategies, and promote best practices in verification and validation (e.g., V&V40 guidelines) tasks in the context of CFD simulations in the LA, overall enhancing simulation methods. Participants of the FLAMES workshop will jointly work on common medical imaging and phantom datasets, driving advancements in the field and contributing to a review paper on the state-of-the-art in LA fluid dynamics. By comparing the fluid simulations with clinical and phantom data, we seek to explore the variations in outcomes that arise from different modeling, boundary conditions, setup and solver approaches to compute the fluid analysis. Virtual participation will be available to encourage broad engagement.
To achieve this, we have provided participants with three distinct datasets for the design of a comprehensive pipeline for modeling LA haemodynamics:

1. In vitro data from a 3D-printed left atrium phantom using particle image velocimetry (PIV).
2. Patient-specific time-resolved segmentations from 4D flow magnetic resonance imaging (MRI) data.
3. Dynamic opacity data from left heart computed tomography (CT) imaging.

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